

Alternative PISC Timeframe Demonstration Crosswalk

Contents

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Evaluate Information about the Alternative PISC Timeframe

Demonstration of the Proposed GS Site

40 CFR 146.93(c); 40 CFR 146.82(a)(15); 40 CFR 146.84 and 40 CFR 146.90; Implementation Manual Section 5.18; Geologic Sequestration of Carbon Dioxide: Underground Injection Control (UIC) Program Class VI Well Plugging, Post-Injection Site Care, and Site Closure Guidance; Testing and Monitoring Guidance; and the 2012 Class VI Well Project Development Guidance, Section 5.1.5.

This Crosswalk includes information from the Title 40 Code of Federal Regulations (CFR) and generally follows the layout of the Geologic Sequestration Data Tool (GSDT) and narrative templates, with additional information pulled from the Sequestration Guidance documents available on EPA's national UIC program website.

If you have uploaded a file to the GSDT the name will be captured in the system, as will all the filled-in or selected options. They can be downloaded by the permit reviewers as pdfs.

Narratives

Narratives cover the range of information desired and leave the final organization to the applicant's preference. The Crosswalk does not replace the Template but may add items to consider. Where there are similar questions repeated in different sections of the Template, the Crosswalk attempts to put those in a preliminary discussion at the front of the document in a generic format (i.e. each subsection will have a slightly different focus to reduce repetition).

Documents

To keep document size manageable and provide all the information in a usable format, it would be useful to create a separate file or files for the different types of information. If the GSDT upload option does not allow multiple files or overwrites the first one, zip the files together prior to uploading.

The Project Information Crosswalk discusses file format, styles, sizes, and types of supporting documentation requests under *Formatting and Other Data Expectations*.

Referencing Other Submissions

Note that a number of discussions are included under multiple headings and different modules. To avoid errors and duplication, please do NOT submit the detailed information twice. Include the appropriate synthesis in the section discusses and reference materials submitted as part of the permit application, via the AoR delineation modeling input advisor, etc., but references should be specific (e.g., "Computational modeling results - see permit application Section 1, pages 2 through 5 and Figures 1.7 through 1.12, as submitted 1/1/14."). Referenced materials should explicitly address the selected requirements. If using an uploaded file, include the file name as well.

Alternative PISC Timeframe Demonstration

Table [SEQ Table * ARABIC]: Computational Modeling

Information	CFR and Guidance	Location & File: GSDT or CBI?
Computational Modeling Results supporting shorter than 50-year PISC	40 CFR 146.93(c)(1)(i)-(vi) or Applicable State Requirements	
1. computational modeling performed pursuant to delineation of the area of review (with figures: extents through time; cross-section; sensitivity runs)		
2. based on significant, site-specific data and information		
3. contain substantial evidence of no further endangerment risk to the USDW		
4. Proposed Timeframe		
Pressure decline timeframe	40 CFR 146.93(c)(1)(ii)	
1. Modeled time after closure to reach baseline pressure at the injection site.		
2. Expected decline rate: at well and monitor wells		
3. Largest differential in pressure over life of project;		
4. Figure: maximum extent of the pressure front at end of timeframe above (per final model results)		
Plume migration rate		
1. Predicted rate of CO ₂ migration and predicted cessation of migration	40 CFR 146.93(c)(1)(iii)	
2. Figure: maximum extent of the plume at end of timeframe above (per final model results)	40 CFR 146.84	
CO ₂ trapping processes	40 CFR 146.93(c)(1)(iv)	
1. Site specific trapping or immobilization processes:		
a. Capillary actions		
b. Dissolution		
c. Local mineralization		

Information	CFR and Guidance	Location & File: GSDT or CBI?
CO ₂ trapping rate	40 CFR 146.93(c)(1)(v)	
1. Predicted rate of CO ₂ trapping by the above		
Analyses, studies, research	40 CFR 146.93(c)(1)(vi)	
1. Specific analyses, studies, or site-specific work for verification		
Previously submitted material or new files		

Table [SEQ Table * ARABIC]: Potential Conduits

Information	CFR and Guidance	Location & File: GSDT or CBI?
Potential Conduits for Fluid Movement	40 CFR 146.93(c)(1)(vii)-(xi) or Applicable State Requirements	
1. Use specific references for material submitted elsewhere		
a. Ex. AoR, Section ?, Pages – and figures – submitted on-)\		
b. These should explicitly address the requirements		
Confining Zone(s) Characterization	40 CFR 146.93(c)(1)(vii)	
1. demonstration that it is free of transmissive faults, fractures, and micro-fractures and of appropriate thickness, permeability, and integrity to impede fluid (e.g., carbon dioxide, formation fluids) movement;		
Potential fluid movement conduits	40 CFR 146.93(c)(1)(viii)	
1. including planned injection wells and project monitoring wells		
2. any other projects in proximity to the predicted/modeled,		
3. final extent of the carbon dioxide plume and area of elevated pressure		
Well construction	40 CFR 146.93(c)(1)(ix)	
1. A description of the well construction and an assessment of the quality of plugs of all		

Information	CFR and Guidance	Location & File: GSDT or CBI?
abandoned wells within the area of review		
Injection zone – USDW distance	40 CFR 146.93(c)(1)(x)	
1. The distance between the injection zone and the nearest USDWs above and/or below the injection zone;		
Additional site-specific factors	40 CFR 146.93(c)(1)(xi)	
Previously submitted material or new files		

Table [SEQ Table * ARABIC]: Data Quality

Information	CFR and Guidance	Location & File: GSDT or CBI?
Data Quality	40 CFR 146.93(c)(2) or Applicable State Requirements	
1. Number of items		
Analyses and tests	40 CFR 146.93(c)(2)(i)	
1. All analyses and tests performed to support the demonstration must be accurate, reproducible, and performed in accordance with the established quality assurance standards;		
Estimation techniques	40 CFR 146.93(c)(2)(ii)	
1. Estimation techniques must be appropriate and EPA-certified test protocols must be used where available;		
Appropriate models	40 CFR 146.93(c)(2)(iii)	
1. Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream and injection and site conditions over the life of the geologic sequestration project;		
Calibrated models	40 CFR 146.93(c)(2)(iv)	
1. Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology well sites) where sufficient data are available;		
Conservative values and assumptions	40 CFR 146.93(c)(2)(v)	

Information	CFR and Guidance	Location & File: GSDT or CBI?
1. Reasonably conservative values and modeling assumptions must be used and disclosed to the Director whenever values are estimated on the basis of known, historical information instead of site-specific measurements;		
Uncertainty analysis	40 CFR 146.93(c)(2)(vi)	
1. An analysis must be performed to identify and assess aspects of the alternative post-injection site care timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration.		
QA/QC Plan	40 CFR 146.93(c)(2)(vii)	
1. An approved quality assurance and quality control plan must address all aspects of the demonstration; and,		
Additional Criteria	40 CFR 146.93(c)(2)(viii)	
Previously submitted material or new files		

Table [SEQ Table * ARABIC]: Complete Submission

Information	CFR and Guidance	Location & File: GSDT or CBI?
Validate Required Fields		
1. Required check for blank fields		
Authorized submission		
1. Must have completed an EPA Electronic Signature Agreement		
2. Submit means you agree to the certification.		